

Distribution of the Scorpion,
Vaejovis carolinianus (Beauvois) — a Reevaluation,
(Arachnida: Scorpionida: Vaejovidae)

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ABSTRACT—*Vaejovis carolinianus* (Beauvois) is primarily an upland scorpion ranging from the Ohio River in central Kentucky to the inner Coastal Plain of Alabama and, east/west, from the Fall Zone of South Carolina and Georgia to eastern Mississippi and westcentral Tennessee. A disjunct population inhabits the Tunica Hills, along the eastern side of the Mississippi River in southwestern Mississippi and adjacent Louisiana. It is abundant in the Cumberland Plateau of Kentucky, Tennessee, and Alabama, but occurs only in the western tip of Virginia. The distribution skirts the western and southern peripheries of the Blue Ridge Province, including only certain border counties of North Carolina, primarily those adjoining Georgia and western South Carolina. The northward extension west of the Appalachians is much greater than that to the east, and sporadic records from the interior of North Carolina and southern border counties east of the Appalachians apparently constitute accidental human importations. Specific localities are detailed and plotted on a distribution map.

The southern unstriped scorpion, *Vaejovis carolinianus* (Beauvois) (Fig. 1), characterized by dusky brown pigmentation without stripes and the absence of a subaculear tubercle on the telson, is the only indigenous scorpion in the southeastern United States known to occur north of Florida (Muma 1967, Shelley 1994). Rossman (1979) presented a distribution map and summarized earlier records; Gibbons et al. (1990) mapped the overall distribution and that in Alabama, and reported that the scorpion occurs in scattered localities from central Kentucky, eastern Tennessee, and western parts of Virginia and the Carolinas through Georgia and Alabama, chiefly above the Coastal Plain. Gibbons et al. mentioned that isolated records were available for eastern and southwestern Mississippi, and the adjacent part of Louisiana, and that the scorpion ranges south of the Fall Zone in Alabama as far as Dallas County. However, the only specific locality reported in the latter areas is Tunica Hills, along the eastern side of the Mississippi River in West Feliciana Parish, Louisiana, and Wilkinson County, Mississippi, and

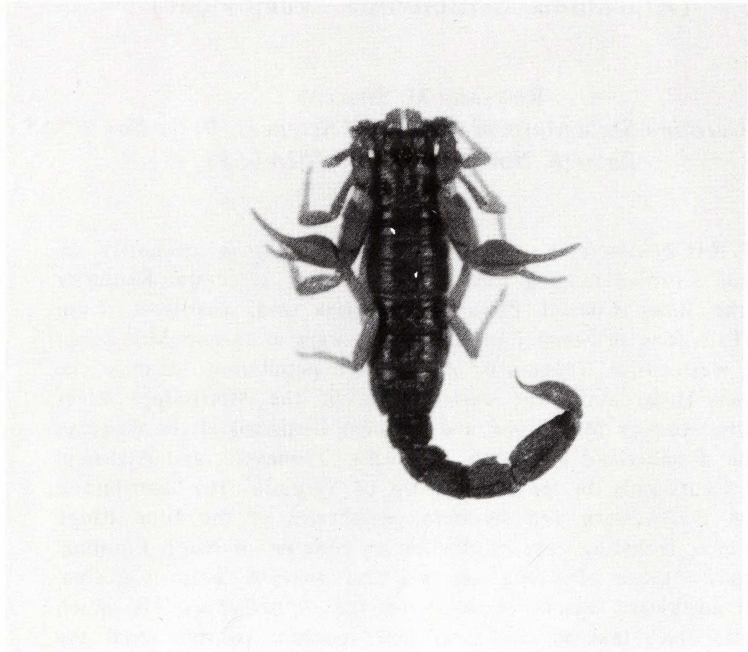


Fig. 1. *Vaejovis carolinianus*, dorsal view.

few definite sites of occurrence have ever been recorded. The only other published records known to me are the following by Brimley (1938) and/or Shelley (1975a):

KENTUCKY: *Laurel Co.*, 1 mi (1.6 km) W Baldrock. *Bell Co.*, Pineville.

VIRGINIA: *Lee Co.*, Cumberland Gap.

TENNESSEE: *Sevier Co.*, Pigeon Forge and Laurel Creek, Great Smoky Mountains National Park.

NORTH CAROLINA: *Cherokee Co.*, near Culberson and Murphy. *Polk Co.*, Tryon and Columbus.

SOUTH CAROLINA: *Pickens Co.*, Clemson. *Laurens Co.*, Laurens. *Lexington Co.*, Lexington.

GEORGIA: *Habersham Co.*, Tallulah Falls (incorrectly placed in Rabun County). *Fulton Co.*, Atlanta. *Clarke Co.*, Athens.

For the past 15 years, I have examined unreported museum samples of *V. carolinianus* and collected the scorpion in southeastern states; from these records a clear picture of the species' range has emerged

(Fig. 2). The purpose of this contribution is to document the distribution by providing specific localities and collection data, and to publish a dot map that eliminates ambiguities in previous maps, in which counties of occurrence are shaded. This procedure is misleading for peripheral areas like Lee County, Virginia, where *V. carolinianus* occurs only in Cumberland Gap, in the westernmost two miles of the County and State. Concerted efforts to find *V. carolinianus* eastward in Lee County have been unsuccessful (R. L. Hoffman, Virginia Museum of Natural History, personal communication), so shading the entire county incorrectly implies wider occurrence.

The overall distribution, as documented herein, extends southward through the Cumberland Mountains from the Ohio River, the northern boundary in central Kentucky, and spreads eastward to the Appalachians



Fig. 2. Distribution of *V. carolinianus*.

in southeastern Tennessee. The border then swings southward around the bulk of the Blue Ridge Province, penetrating border counties of southwestern North Carolina by spreading up river valleys from adjacent states. The easternmost natural occurrence in North Carolina is in Polk County; other records in this State are believed to represent accidental human importations (Shelley 1994). The distributional boundary then angles southeastward through the Piedmont Plateau of South Carolina to Columbia and follows the Fall Zone through Georgia into Alabama, before spreading onto the Gulf Coastal Plain in western Alabama and extending to the Mississippi River above Baton Rouge, Louisiana. Fewer specimens are available from the western side of its distribution, but *V. carolinianus* ranges northward through eastern Mississippi and western Tennessee to the Ohio River in central Kentucky; the only specimens taken farther west are those from Tunica Hills. Although these records still are somewhat scattered, they are continuous enough to suggest regular occurrence throughout the overall range except for the Tunica Hills population, which is disjunct. *Vaejovis carolinianus* is therefore an upland species occurring exclusively west of the Fall Zone in the Carolinas and Georgia. Where it extends onto the Coastal Plain in Alabama, it shows a marked preference for hills or ridges like Tunica Hills and the Lime and Buhrstone Hills, and the Chunnenugee Ridge, in Clarke County, Alabama. The scorpion has not been taken in the pine flatwoods that are abundant in the Coastal Plain of the Carolinas and Georgia. Muma (1967) considered *V. carolinianus* to be a potential inhabitant of the northern and panhandle counties of Florida, but the known distribution shows that this possibility is remote, even for the most proximate part of the State, i. e., the inner peripheries of Escambia and Santa Rosa counties in the western panhandle.

The greater northward extension west of the Blue Ridge Province, in contrast to that on the east, is particularly striking. East of the Appalachians, the range angles southeastward from Polk County, North Carolina, to Lexington County, South Carolina; to the west, however, it extends some 230 mi (368 km) farther north, to the Ohio River in central Kentucky. If the distribution east of the Appalachians were equivalent to that on the west, it would reach to around Charlottesville, Virginia! *Vaejovis carolinianus* is common in the Cumberland Mountains of Kentucky and Tennessee, as it also is in the western Blue Ridge Province in southeastern Tennessee. However, the only records from the western periphery of North Carolina are from Madison and Swain counties (Shelley 1994), which doubtlessly represent penetrations up the French Broad and Little Tennessee river valleys, respectively. The former also implies occurrence in adjacent Cocke County, Tennessee,

where the species has not been taken. The range swings northwestward from Sevier, and presumably Cocke, counties into the Cumberland Plateau and does not extend farther north in the Blue Ridge and Ridge and Valley Provinces.

Vaejovis carolinianus typically occurs in association with decaying pine logs, particularly beneath loose bark; it can be plentiful under loose rocks on talus slopes and has been encountered in mesic deciduous forests (Shelley 1975b, 1994). In central Tennessee, specimens have been taken at night with ultraviolet light from moss-covered vertical surfaces of old highway roadcuts in limestone, suggesting that the scorpions inhabit the cracks and crevices on these walls and forage either in the cracks or on the surface itself (W. D. Sissom, West Texas A&M University, personal communication). Rossman (1979) encountered specimens in clay soil on a stream bank, and beneath decaying logs, leaf litter, slabs of wood, and the bark of a dead hardwood tree. Gibbons et al. (1990) stated that *V. carolinianus* was restricted to moist woodland habitats, where it occurs beneath leaves, logs, and other litter. The scorpion occasionally wanders into buildings and has been collected in homes in Davidson County, Tennessee; Madison, Polk, and Transylvania counties, North Carolina; Laurens, Spartanburg, Lexington, and Oconee counties, South Carolina; and Tishomingo and Clarke counties, Mississippi. It was also taken in a dormitory room at Mississippi State University, Oktibbeha County, Mississippi.

The following locality records are supported by preserved specimens and are presented in alphabetical order; those from North Carolina are provided by Shelley (1994). Citations include the date of collection, the name(s) of the collector(s), and the repository, indicated by the following acronyms:

AMNH - American Museum of Natural History, New York,
New York.

ANSP - Academy of Natural Sciences, Philadelphia, Pennsylvania.

CAS - California Academy of Sciences, San Francisco.

CC - Biology Department, Columbus College, Columbus, Georgia.

CU - Entomology Department, Clemson University, Clemson
South Carolina.

FMNH - Field Museum of Natural History, Chicago, Illinois.

FSCA - Florida State Collection of Arthropods, Gainesville.

ILNHS - Illinois Natural History Survey, Champaign.

MCZ - Museum of Comparative Zoology, Harvard University,
Cambridge, Massachusetts.

MEM - Mississippi Entomological Museum, Mississippi State University,
Starkville.

- MMNS - Mississippi Museum of Natural Science, Jackson.
 MPM - Milwaukee Public Museum, Milwaukee, Wisconsin.
 NCDA - Pest Control Division, North Carolina Department of Agriculture, Raleigh.
 NCSM - North Carolina State Museum of Natural Sciences, Raleigh.
 NCSU - Entomology Department, North Carolina State University, Raleigh.
 NMNH - National Museum of Natural History, Smithsonian Institution, Washington, DC.
 NSC - Natural Science Center, Greensboro, North Carolina.
 RNH - Private collection of R. N. Henson, Boone, North Carolina.
 SEM - Snow Entomological Museum, University of Kansas, Lawrence.
 TAM - Entomology Department, Texas A&M University, College Station, Texas.
 UAAM - University of Arkansas Arthropod Museum, Fayetteville.
 UGA - University of Georgia Museum of Natural History, Athens.
 UL - Biology Department, University of Louisville, Louisville, Kentucky.
 UMMZ - University of Michigan Museum of Zoology, Ann Arbor.
 VMNH - Virginia Museum of Natural History, Martinsville.
 WDS - Private collection of W. D. Sissom, West Texas A&M University, Canyon, Texas.

KENTUCKY: *Bell Co.*, Pineville, 14 August 1952, collector unknown (CAS); Pine Mountain St. Pk., 7 August 1949, H. S. Dybas (FMNH), 2 May 1975, C. C. Cornett (UL), and June 1975 and 1976, J. K. Ettman (NCSM); Fern Lake nr. Middlesboro, 12 August 1959, T. Wolfe, W. L. Burget (AMNH, VMNH); Cumberland Gap, date unknown, W. Faxon (MCZ); and Balkan, 1927, C. F. Clayton (NMNH). *Bullitt Co.*, Fort Knox, date unknown, P. Burchfield (AMNH). *Bullitt/Nelson Cos.*, State Forest, 17 July 1947, H. Nadler (NMNH). *Jefferson Co.*, Ft. Knox, 7 September 1993, G. Ketting (UL). *Laurel Co.*, 1 mi (1.6 km) NW Baldrock, 26 May 1952, L. Hubricht (NMNH). *Lincoln Co.*, locality unknown, 22 May 1966, B. Carter (UL). *McCreary Co.*, Yahoo Falls and Cumberland Falls, 24 May 1972, collector unknown (UL). *Meade Co.*, Quarry off KY hwy. 1638, 12 July 1967, C. Karnella (UL). *Pulaski Co.*, Mt. Victory, 27 May 1972, collector unknown (UL). *Rockcastle Co.*, 3 mi (4.8 km) N Mt. Vernon, Renfro Valley, 10 June 1954, R. Barbour (NCSM). *Taylor Co.*, Campbellsville, 7 May 1956, collector unknown (FSCA). *Wayne Co.*, locality and collector unknown, 21 September 1994 (UL). *Whitley Co.*, Cumberland Falls St. Pk., nr. Cumberland Falls, 27 June 1945 collector unknown (CAS); and 0.5 mi (0.8 km) E Cumberland Falls St. Pk., 10 October 1992, R. W. VanDevender (RNH).

VIRGINIA: *Lee Co.*, 0.5 mi (0.8 km) N Cumberland Gap, Willis Hollow, 15 July 1958, C. Stoddard, W. L. Burget (AMNH, VMNH); and Cumberland Gap, above Cudjo's Cave, 23 June 1950, J. H. Fowler (CAS).

TENNESSEE: *Anderson Co.*, Oak Ridge, August 1962, H. Phillips (NMNH). *Blount Co.*, Great Smoky Mts. Nat. Pk., The Sinks, 19 June 1960, I. McClurkin (FSCA); Chilowhee Mts., 21 July 1965, C. L. Wilder (VMNH); and Townsend, 19 June 1960, I. McClurkin (FSCA). *Cheatham Co.*, Ashland City, summer 1994, R. Stevens (NCSM). *Claiborne Co.*, Cumberland Gap, 11 June 1933, H. W. Chickering (MCZ). *Cumberland Co.*, 11 mi (17.6 km) NNW Crossville, US hwy. 127 at Lickfork Cr., 9 June 1979, R. M. Shelley, R. K. Tardell (NCSM). *Davidson Co.*, Goodlettsville, 19 December 1949, Ross, Stannard (ILNHS); ca. 1.5 mi (2.4 km) SW Marrowbone L., 28 April 1991, D. McGinnity (WDS); and Nashville, 23 May 1985, K. Collier (WDS). *DeKalb Co.*, Edgar Evins, St. Pk., 20 May 1983, R. W. VanDevender (RNH); and 6 mi (9.6 km) NE Smithville off TN hwy. 56 on S side Center Hill L., 20 July 1984, W. D. Sissom, C. N. McReynolds (WDS). *Hamilton Co.*, Chattanooga, October 1932, L. Trenholm (NMNH). *Hardin Co.*, Savannah, 1960, collector unknown (AMNH); Counce, YMCA camp nr. Pickwick Dam, 5 August 1966, A. Smoot (AMNH); and Pickwick Dam, 29 September 1963, M. Lou (CAS). *Madison Co.*, Jackson, 1958, A. F. Archer (AMNH). *Marion Co.*, US hwy. 64, 2.9 mi (4.6 km) E jct. TN hwy. 156, 26 March 1979, R. Franz, R. E. Ashton, A. L. Braswell (NCSM); 6 mi (9.6 km) S Jasper, along TN hwy. 156A, 0.2 mi (0.3 km) N AL line, 21 May 1983, R. M. Shelley, J. Staton (NCSM). *Morgan Co.*, locality unknown, 28 August 1976, J. C. Mitchell, J. Byrd, J. Kline (VMNH); and Catoosa WRA, between Lookout & Phil, 8 May 1976, R. L. Jones (MCZ). *Pickett Co.*, Pickett St. Pk., 1 May 1935, H. Augusby (NMNH). *Polk Co.*, exact site unknown, April 1985, R. W. VanDevender (RNH); and Parksville Reserve, 7 August 1936, M. H. Hatch (AMNH). *Putnam Co.*, 2 mi (3.2 km) E Cookeville, along I-40, date and collector unknown (FMNH). *Rhea Co.*, 3 mi (4.8 km) N Spring City, 26 June 1962, F. N. Young (FSCA); and Spring City, August 1919, E. R. Dunn (MCZ). *Roane Co.*, nr. Harriman, 11 July 1933, W. Ivie (AMNH); and Kingston, 12 and 14 July 1933, W. J. Gertsch, W. Ivie (AMNH) and 15 April 1952, G. E. Smith (AMNH). *Rutherford Co.*, ca. 7.4 mi (11.8 km) E Murfreesboro, along US hwy. 70S at Cripple Cr., 18 April 1973, Czajka, Ketchum (MPM). *Sevier Co.*, Pigeon Forge, 29 August 1943, J. A. Bell (CAS). *Van Buren Co.*, Fall Creek Falls St. Pk., 11 August 1951, T. Cohn (AMNH). *Warren Co.*, nr. McMinnville, along TN hwy. 8, 15 August 1971, M. A. Morris (ILNHS). *White Co.*, Rock Island, 18 April

1917, collector unknown (NMNH). *Wilson Co.*, Cedars of Lebanon St. Pk., 16 April 1976, R. L. Jones, A. C. Ecternauer (MCZ).

NORTH CAROLINA: *Cherokee, Columbus, Guilford, Haywood, Iredell, Madison, Mecklenburg, Polk, Swain, Transylvania, Wake, and Yancey* counties, as per the listing in Shelley (1994) (NCSM, NCSU, NMNH, NSC, RNH, SEM).

SOUTH CAROLINA: *Abbeville Co.*, Sumter Natl. For., FS rd. 505 at Long Cane Scenic Area, 14 September 1980, R. M. Shelley, M. Morgan (NCSM). *Anderson Co.*, Pendleton, Aldwood, 18 May 1985, J. H. Morse (CU); and along US hwy. 29, exact site unknown, July 1989, A. Hill (RNH). *Edgefield Co.*, 11.4 mi (18.2 km) W Edgefield, SC hwy. 68, 0.2 mi (0.3 km) N jct. US hwy. 52, 8 August 1976, R. M. Shelley (NCSM). *Greenville Co.*, nr. NC border, exact location unknown, 29 August 1929, collector unknown (NMNH); and Greenville, date and collector unknown (ANSP) and Camp Sevier, WWI Army Post probably now in Greenville, date unknown, J. Leidy (ANSP). *Laurens Co.*, Kinards, 15 May 1975, G. F. Smith (NCSU); and Laurens, 1 November 1955, collector unknown (CAS). *Lexington Co.*, nr. Chapin on L. Murray, 19 February 1991, F. Authinreith (RNH); Leesville vic., 26 September - 7 October 1949, L. Brodie (FMNH); and Lexington, date and collector unknown (CAS). *McCormick Co.*, locality unknown, 1935, collector unknown (NMNH) and 15 June 1958, collector unknown (MCZ); and De La Howe Forest, 10 July 1942, C. J. Goodnight (ILNHS). *Newberry Co.*, Newberry, July 1932, L. A. Savage (NMNH). *Oconee Co.*, Mountain Rest, 1973, R. F. Shriner (NMNH); Oconee St. Pk., 10 June 1991, E. G. Riley (TAM); South Cove Landing, date unknown, A. Dozier (FSCA); nr. Clemson, 22 September 1985, J. R. Mayer (NCSU); and 6.8 mi (10.9 km) S Westminster, along SC hwy. 67 at Choestoea Cr., Hartwell Res., 10 June 1978, R. M. Shelley, W. B. Jones (NCSM). *Pickens Co.*, 7 mi (11.2 km) NE Pickens, 16 October 1976, collector unknown (FSCA); and Clemson, 3 December 1926 and April 1928, C. S. Brimley (NCDA), 25 September 1928, R. C. Fox (CU), February 1930, F. Smith (UAAM), 16 March 1940, E. C. Van Dyke (CAS), 22 April 1968, H. Harris (CU), and 8 September 1976, S. Prichard (CU). *Saluda Co.*, Saluda, 15 June 1958, N. B. Causey (MCZ); and 8 mi (12.8 km) SW Leesville, along Brodie Rd., September 1992, B. Cockerel (RNH). *Spartanburg Co.*, Landrum, 4 August 1910, R. V. Chamberlin (AMNH); and Glenn Springs, 17 October 1984, H. B. Matthews (NCSU).

GEORGIA: *Baldwin Co.*, Milledgeville, 2 August 1894, collector unknown (NMNH). *Bartow Co.*, E of Cartersville, along GA hwy. 21, 1.8 mi (2.9 km) E jct. hwy. I-75, 17 March 1984, G. T. Baker (MEM). *Butts Co.*, Indian Springs, date unknown, L. M. Underwood (NMNH).

Clarke Co., Athens, 1 October 1936, H. O. Lund (AMNH), 11 October 1960-30 October 1972, N. Bein, W. Eissler, R. Muha, K. Douce (UGA), and 27 November 1983, M. LaSalle (MEM); and Whitehall For., 9 July 1977-21 May 1984, C. L. Smith (UGA). Cobb Co., Austell, date unknown, N. Banks (MCZ); and Kennesaw Mtn., 26 April 1963, P. W. Fattig (NMNH). Columbia Co., Harlem, 25 July 1962, G. Jordan (FSCA). DeKalb Co., Atlanta, September 1982, collector unknown (RNH); Stone Mtn., 15 June 1958, N. B. Causey (MCZ) and 25 August 1966, Trobinck (FSCA); and Dunwoody, Summerbrook Dr., September 1991, A. L. Henson (RNH). Elbert Co., Bobby Brown St. Pk., 31 July 1977, R. M. Shelley (NCSM); and 11 mi (17.6 km) ENE Elberton, along GA hwy. 368 at Pickens Cr., 20 July 1979, R. M. Shelley, R. K. Tardell (NCSM). Floyd Co., Rome, Marshall For., 17 March and 25 April 1963, J. Parker (NMNH). Fulton Co., Roswell, date unknown, Mrs. King (MCZ); Atlanta, 27 June 1943, H. Hoogstraal (FMNH), March 1945 and 21 September 1951, collector unknown (CAS), August 1951, G. W. Fraser (NMNH), and 1957, H. D. Pratt (ILNHS); Chamblee, 15 September 1952, collector unknown (ILNHS). Gordon Co., Horn Mtn., 12 June 1986, J. D. Lazell (NMNH). Habersham Co., Tallulah, 1-4 July 1955, R. B. & R. L. Hoffman (NMNH); Tallulah Falls, 1 April 1891 and April 1897, L. M. Underwood (NMNH); N of Clarkesville, 27 April 1943, W. Ivie (AMNH); and between Clarkesville and Toccoa, 28 April 1943, W. Ivie (AMNH). Harris Co., exact sites unknown, June 1982-August 1992, J. A. Layne, P. Jones, H. M. Johnson, B. A. Craighton, J. A. Riley, J. Chappell, and R. D. Schiavone (CC). Jackson Co., locality not specified, 29 September 1960, Moody (UGA). Lumpkin Co., Frogtown Gap, 31 May 1934, F. Harper (AMNH). McDuffie Co., between Thomson and Washington, 22 April 1943, W. Ivie (AMNH). Meriwether Co., Warm Springs, 4 May 1935, collector unknown (NMNH). Monroe Co., Forsyth, 1962, A. F. Archer (AMNH). Murray Co., Fort Mtn. St. Pk., 14 July 1952, P. M. Choate (FSCA). Muscogee Co., Columbus, 25 April 1971, W. M. Petrusek (CC) and 5 April 1982, J. Losonsky (CC). Newton Co., Covington, 17 November 1984, J. Wheeler (NMNH). Putnam Co., 8 mi (12.8 km) S Eatonton, Oconee Nat. For., 22 May 1981, J. M. Carpenter (MCZ). Rabun Co., Rabun Jct., April and August 1887, collector unknown (NMNH); and Clayton, 6-12 April 1940, E. C. Van Dyke (CAS) and 5-9 September 1959, K. Ulman (AMNH). Rockdale Co., along Big Haynes Cr., 16 September 1976, T. Schowalter (UGA). Stephens Co., Toccoa Lake, 10 October 1928, collector unknown (NMNH); and Toccoa, June 1953, R. L. Hoffman (NMNH). Taliaferro Co., Crawfordville, 30 July 1971, M. & M. Cazier (WDS). White Co., Unicoi St. Pk., 8 July 1973 and 25 May 1975, H. O. Lund (UGA); and Sautee, 13 September 1959,

H. O. Lund (UGA). *County Unknown*, Gowerville, date unknown, S. M. King (MCZ).

ALABAMA: *Bibb Co.*, nr. Wilton, 28 July 1962, R. E. Crabill, A. B. Gurney (NMNH). *Chambers Co.*, Fairfax, 1949-1950, A. F. Archer (AMNH). *Chilton Co.*, Maplesville, date and collector unknown (FSCA); and Verbena, 22 July 1900, W. R. Maxon (NMNH). *Clarke Co.*, Thomasville, 6 August 1933, C. E. Burt (NMNH); and Camp Maubila, a Boy Scout camp. ca. 6 mi (9.6 km) S Grove Hill, 4 mi (6.4 km) E US hwy. 43, 23 June 1983, P. Cross (MEM). *Clay Co.*, Cheaha Mtn., 3 September 1969, J. G. E. Rehn (ANSP). *Cleburne Co.*, locality unknown, 8-9 September 1946, collector unknown (FSCA); and Talladega Natl. For., 28 July 1962, R. C. & A. Graves (FSCA). *Coosa Co.*, Hatchet Cr., 4 June 1940, A. F. Archer (AMNH). *Cullman Co.*, Cullman, St. Boniface Col., 17 June 1958, collector unknown (FSCA). *DeKalb Co.*, Desoto St. Pk., 10 May 1986, R. F. C. Naczi (UMMZ) and 18-19 May 1990, D. Hildebrandt, T. L. Schiefer (MEM); and Collinsville, 10 July 1962, H. B. Cunningham (ILNHS). *Franklin Co.*, Ezell Cave, along AL hwy. 1060, 8 November 1969, F. Shires (NCSM). *Jackson Co.*, 12 mi (19.2 km) N Scottsboro, National Bridge Cave, August 1970, R. C. Graham (NCSM). *Lauderdale Co.*, Wilson Dam, 13 July 1942, J. W. Belkin (AMNH) and June 1953, R. V. Schick (AMNH). *Lee Co.*, Auburn, November 1895 and July 1896, L. M. Underwood (NMNH). *Madison Co.*, Huntsville, Monte Sano St. Pk., date unknown, Rosenburg (FSCA); E of Huntsville, SW slope of Round Top Mtn., 19 July 1988, K. Woodstock (NMNH); and Monte Sano St. Pk., 1946, J. Murphy (AMNH). *Morgan Co.*, locality and collector unknown, 27 July 1910 (AMNH). *Russell Co.*, exact site unknown, 29 July 1990, T. Mann (CC). *Tallapoosa Co.*, Dadeville, 13 July 1914 (NMNH); and Alexander City, 31 October 1944, G. Nelson (MCZ). *Tuscaloosa Co.*, Lake Lurleen St. Pk., 18 May 1988, C. M. & O. S. Flint (NMNH). *Walker Co.*, Forks of Warrior R., 20 October 1912, H. Smith (AMNH). *Winston Co.*, Double Springs, 18 June 1958, N. B. Causey (MCZ).

MISSISSIPPI: *Clarke Co.*, 0.8 mi (1.3 km) N Hurricane Cr., 3 December 1961, L. Hubricht (NMNH); and at AL line, 5.0 mi (8.0 km) SE Lauderdale Co. line, 17 April 1987, R. L. Jones, J. Wiseman (MMNS). *Oktibbeha Co.*, Starkville, Mississippi St. Univ., 3 October 1983, collector unknown (MEM). *Tishomingo Co.*, Iuka, 31 October 1988, B. Hopper (MEM); and Tishomingo St. Pk., 28 July 1983, P. R. Miller (MEM).

No specimens were available from the following additional, generalized county records of Benton (1973), Rossman (1979), and Gibbons et al. (1990). Dots are therefore placed centrally in these counties in Figure 2:

KENTUCKY: *Jackson, Larue, Lee, and Leslie* counties.

TENNESSEE: *Claiborne, Grundy, and Monroe* counties.

GEORGIA: *Cherokee, Crawford, Dade, and Polk* counties.

ALABAMA: *Calhoun, Colbert, Dallas, Elmore, Fayette, Hale, Lawrence, Marion, Randolph, and Shelby* counties.

MISSISSIPPI: *Lauderdale* County.

The following additional localities were communicated by H. L. Stahnke (*in litt.*) based on specimens in his personal collection, now housed at the CAS. These samples were not represented in the material loaned from that institution, but they are considered accurate and are hence incorporated into Figure 2.

KENTUCKY: *Meade Co.*, Muldraugh.

TENNESSEE: *Blount Co.*, Great Smoky Mountains Nat. Pk., 1 mi (1.6 km) S The Sinks, and along Little Tennessee R. at Long Arm Bridge. *Sevier Co.*, Gatlinburg.

ALABAMA: *Jefferson Co.*, Adger. *Tuscaloosa Co.*, Peterson.

MISSISSIPPI: *County Unknown*, Pine Flat.

The following localities, communicated verbally by J. L. Knight (South Carolina State Museum, Columbia), are also incorporated into Figure 2.

SOUTH CAROLINA: *Aiken Co.*, North Augusta, S of I-20 along N side of Savannah River. *Lexington Co.*, West Columbia. *McCormick Co.*, L. Thurmond.

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NSC, and J. Knight did likewise for specimens at the SCSM. D. S. Lee also reviewed a preliminary draft of the manuscript. Figure 1 is courtesy of D. J. Lyons, NCSM exhibits designer.

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